

## MISCELLANEOUS NOTES

### 1. DISTINGUISHING KILLS OF TWO LARGE MAMMALIAN PREDATORS IN SPITI VALLEY HIMACHAL PRADESH

Predation by wild carnivores on livestock is an important issue that the protected area manager needs to address. In areas where there are two or more sympatric carnivores, one problem is how to attribute a particular kill to a particular carnivore species. Spiti Valley in H.P. is one such area where at least two carnivores predate on the livestock; the snow leopard *Panthera uncia* and the Tibetan wolf *Canis lupus chanco*. While the snow leopard occurs throughout the valley, Tibetan wolf is restricted to the left bank of the Spiti river.

The valley harbours two protected areas — Kibbar Wildlife Sanctuary and Pin Valley National Park on the left and right banks of the Spiti river, respectively. Pin Valley largely consists of steep snow covered mountain peaks, deep valleys and alpine pastures. Kibbar, in addition, consists of rolling slopes of the Tibetan plateau. Among mountain ungulates, Himalayan ibex *Capra ibex sibirica* forms the only wild prey base in Pin Valley, while Kibbar Sanctuary harbours ibex as well as bharal *Pseudois nayaur*.

As mentioned earlier, while only the snow leopard occurs in Pin Valley, the Kibbar Sanctuary has both the snow leopard and the Tibetan wolf.

Local livestock contributes substantially to the prey base and is a frequent victim of the predators. Among these are the domestic yak, horse, donkey, churu (cow-yak hybrid), sheep and goat. As a manager of these protected areas from 1992 to 1995, I recorded more than 350 cases where local people had applied for compensation for killing of their livestock by wild carnivores. In almost all cases where eye-witnesses were absent, the locals attributed the kills to the snow leopard. Casual interviews of the local people indicated that they consider the snow leopard as their main enemy, and the wolf to a lesser extent. This is really worrying since the snow leopard is the largest Trans-Himalayan felid. This

magnificent apex predator is highly endangered and considered as the flagship species for conserving the Trans-Himalayan ecosystem. I, therefore, found it important to ascertain the predator species responsible for killing livestock in each case.

I examined about seventeen cases where eye-witnesses or other evidence confirmed the predator species. Of these, eleven kills were definitely made by the snow leopard and six by the Tibetan wolf. Examination of these kills showed that the snow leopard had killed relatively larger species like the yak, horse, donkey etc. Sometimes it entered the cowsheds and killed all the animals inside, small or large. Such incidents are reported mostly from remote localities. The snow leopard mostly attacked the upper region of the prey's neck. Wolf attacks were usually lower and often resulted in puncturing the jugular vein. Wolves were involved in surplus killing which were usually sheep and goat, whereas the kills of the snow leopard appeared to be according to its requirement.

Interestingly, many kills were recovered as headless carcasses, and later these were confirmed by the villagers as wolf kills. In earlier days, local people used to raid the dens of the wolf to destroy or remove the pups during the breeding season. During this operation the villagers had noticed that the denning sites often had several heads of their prey. They believe that the heads are taken by wolves to their den to train the pups.

Eventhough the result of this preliminary study are in no way conclusive, simple natural history observations of kills can help us in making educated guesses about the predator species.

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